

REMARKS

In the non-final Office Action dated February 7, 2011, the Examiner rejects claim 20 under 35 U.S.C. § 101 as being directed to non-statutory subject matter; rejects claims 1, 5, 6, and 14 under 35 U.S.C. § 103(a) as unpatentable over IVERSON et al. (U.S. Patent No. 6,052,379) and what is allegedly well known in the art; rejects claims 2, 3, 7-11, 13, and 15-20 under 35 U.S.C. § 103(a) as being unpatentable over IVERSON et al. in view of HO (U.S. Patent No. 6,862,270); rejects claim 4 under 35 U.S.C. § 103(a) as being unpatentable over IVERSON et al. in view of Applicants' allegedly admitted prior art (AAPA); and rejects claim 12 under 35 U.S.C. § 103(a) as being unpatentable over IVERSON et al. in view of HO and further in view of CHIRUVOLU (U.S. Patent No. 6,839,321). Applicants respectfully traverse these rejections.

By way of this amendment, Applicants amend claims 1 and 5-20 to improve form. No new matter has been added by way of the present amendment. Claims 1-20 are pending.

Rejection under 35 U.S.C. § 101

Claim 20 stands rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Without acquiescing in the rejection, but merely to expedite prosecution, Applicants amend claim 20 to address the Examiner's concerns. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 20 under 35 U.S.C. § 101.

Rejection under 35. U.S.C. § 103(a) based on IVERSON et al. and what is allegedly well known in the art

Claims 1, 5, 6, and 14 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over IVERSON et al. and what is allegedly well known in the art. Applicants respectfully traverse this rejection.

Amended independent claim 1 is directed to a method for allocating bandwidth in a network appliance. The method includes determining, by the network appliance, that a first policy is to be applied to a packet stored in an input queue of the network appliance; determining, by the network appliance and based on determining that the first policy is to be applied to the packet, whether a first bandwidth in a maximum bandwidth bucket is sufficient to allow the packet to pass immediately through the network appliance, where the first bandwidth is allocated to the maximum bandwidth bucket based on a maximum bandwidth allocation associated with the first policy; determining, by the network appliance and when the first bandwidth is determined to be sufficient to allow the packet to pass immediately through the network appliance, whether a second bandwidth in one of a plurality of guaranteed bandwidth buckets is sufficient to allow the packet to pass immediately through the network appliance, where the second bandwidth is allocated to the one of the plurality of guaranteed bandwidth buckets based on a guaranteed bandwidth allocation associated with the first policy; transferring, by the network appliance, a shared bandwidth from a shared bandwidth bucket to the one of the plurality of guaranteed bandwidth buckets when the second bandwidth in the one of the plurality of guaranteed bandwidth buckets is not sufficient to allow the packet to pass immediately through the network appliance, where the shared bandwidth is allocated to the shared bandwidth bucket based on an underutilization of bandwidth in any one of the plurality of bandwidth buckets; determining, by the network appliance and when the second bandwidth or the shared bandwidth is sufficient to allow the packet to pass immediately through the network appliance, whether a different policy is to be applied to the packet; determining, by the network appliance and when the different policy is to be applied to the packet, whether a third bandwidth in another one of the plurality of guaranteed bandwidth buckets is sufficient to allow the packet to pass

immediately through the network appliance, where the third bandwidth is allocated to the other one of the plurality of guaranteed bandwidth buckets based on another guaranteed bandwidth associated with the different policy; and transferring bandwidth from the shared bandwidth bucket to the other one of the plurality of guaranteed bandwidth buckets when the third bandwidth, in the other one of the plurality of guaranteed bandwidth buckets, is not sufficient to allow the packet to pass immediately through the network appliance. IVERSON et al. and what is allegedly well known in the art do not disclose or suggest one or more of the above features of claim 1, as amended.

For example, IVERSON et al. and what is allegedly well known in the art do not disclose or suggest determining, by the network appliance and when the second bandwidth or the shared bandwidth is sufficient to allow the packet to pass immediately through the network appliance, whether a different policy is to be applied to the packet; determining, by the network appliance and when the different policy is to be applied to the packet, whether a third bandwidth in another one of the plurality of guaranteed bandwidth buckets is sufficient to allow the packet to pass immediately through the network appliance, where the third bandwidth is allocated to the other one of the plurality of guaranteed bandwidth buckets based on another guaranteed bandwidth associated with the different policy; and transferring bandwidth from the shared bandwidth bucket to the other one of the plurality of guaranteed bandwidth buckets when the third bandwidth in the other one of the plurality of guaranteed bandwidth buckets is not sufficient to allow the packet to pass immediately through the network appliance, as recited in claim 1, as amended.

The Examiner admits that IVERSON et al. does not disclose “a plurality of guaranteed bandwidth buckets or another one of the plurality of guaranteed bandwidth buckets” (Office

Action, p. 4). The Examiner relies on the Abstract, Fig. 10, and col. 17, line 56 – col. 18, line 19 of IVERSON et al. for allegedly disclosing “providing a shared bandwidth bucket associated with each of the plurality of the guaranteed bandwidth buckets” and alleges that “it would have been obvious to one having ordinary skill in the art at the time the invention was made to have more than one guaranteed bandwidth bucket since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art” (Office Action, pp. 3 and 4). Applicants respectfully submit that neither IVERSON et al., nor what is allegedly well known in the art, whether taken alone or in any reasonable combination, disclose or suggest the above feature of claim 1, as amended.

At the outset, Applicants respectfully submit that since, as admitted by the Examiner, IVERSON et al. does not disclose or suggest a plurality of guaranteed bandwidth buckets, IVERSON et al. cannot reasonably be relied on to disclose or suggest determining, by the network appliance and when the second bandwidth or the shared bandwidth is sufficient to allow the packet to pass immediately through the network appliance, whether a different policy is to be applied to the packet; determining, by the network appliance and when the different policy is to be applied to the packet, whether a third bandwidth in another one of the plurality of guaranteed bandwidth buckets is sufficient to allow the packet to pass immediately through the network appliance, where the third bandwidth is allocated to the other one of the plurality of guaranteed bandwidth buckets based on another guaranteed bandwidth associated with the different policy; and transferring bandwidth from the shared bandwidth bucket to the other one of the plurality of guaranteed bandwidth buckets when the third bandwidth in the other one of the plurality of guaranteed bandwidth buckets is not sufficient to allow the packet to pass immediately through the network appliance, as recited in claim 1, as amended.

Further, Applicants submit that merely having more than one guaranteed bandwidth bucket, as alleged by the Examiner with respect to the disclosure of IVERSON et al., cannot reasonably be construed to disclose or suggest that one of the plurality of guaranteed bandwidth buckets is allocated an amount of bandwidth that is based on a guaranteed bandwidth allocation associated with a first policy and the other one of the plurality of guaranteed bandwidth buckets is allocated another amount of bandwidth that is based on another guaranteed bandwidth associated with a different policy. Therefore, IVERSON et al. and what is allegedly well known in the art, whether taken alone or in any reasonable combination, do not disclose or suggest the above features of claim 1, as amended.

Nevertheless, at the Abstract, IVERSON et al. discloses:

A priority scheme is based on an amount of preallocated bandwidth unused by channel unit ports. A first water level in a first bucket is associated with an amount of allotted bandwidth unused by the channel unit and a second water level in a second bucket is associated with an amount of unused allotted bandwidth exceeding an overflow level of the first bucket. A priority value is derived from the first water level when the first water level is above zero. The priority value is derived from the second water level when the first water level is below or equal to zero. In another aspect of the invention, the high priority value is determined by tracking a percentage utilization of allocated bandwidth for a predetermined number of time increments comprising a measurement time period.

This section of IVERSON et al. discloses that “[a] first water level in a first bucket is associated with an amount of allotted bandwidth unused by the channel unit and a second water level in a second bucket is associated with an amount of unused allotted bandwidth exceeding an overflow level of the first bucket.” Further, this section of IVERSON et al. discloses that “[a] priority value is derived from the first water level when the first water level is above zero,” and that “[t]he priority value is derived from the second water level when the first water level is below or equal to zero.” However, nowhere does IVERSON et al. disclose or suggest that one of a

plurality of guaranteed bandwidth buckets is allocated an amount of bandwidth that is based on a guaranteed bandwidth allocation associated with a first policy and another one of the plurality of guaranteed bandwidth buckets is allocated another amount of bandwidth that is based on another guaranteed bandwidth associated with a different policy. Thus, this section of IVERSON et al. does not disclose or suggest determining, by the network appliance and when the second bandwidth or the shared bandwidth is sufficient to allow the packet to pass immediately through the network appliance, whether a different policy is to be applied to the packet; determining, by the network appliance and when the different policy is to be applied to the packet, whether a third bandwidth in another one of the plurality of guaranteed bandwidth buckets is sufficient to allow the packet to pass immediately through the network appliance, where the third bandwidth is allocated to the other one of the plurality of guaranteed bandwidth buckets based on another guaranteed bandwidth associated with the different policy; and transferring bandwidth from the shared bandwidth bucket to the other one of the plurality of guaranteed bandwidth buckets when the third bandwidth in the other one of the plurality of guaranteed bandwidth buckets is not sufficient to allow the packet to pass immediately through the network appliance, as recited in claim 1, as amended.

At col. 17, line 56 – col. 18, line 19, which describes Fig. 10, IVERSON et al. discloses:

If the $BpCSum$ is positive, the port was requesting bandwidth at a rate below the $CIR+B_c$ for at least the last measurement interval. If the $BpCSum$ is zero, port bandwidth requests have been substantially equal to the $CIR+B_c$ for the port. If the water level in $CSum$ is negative (below the midpoint), the rate that the port has been using bandwidth is above $CIR+B_c$. If the port has accumulated any excess bandwidth credit by transmitting below CIR for some amount of time, this bandwidth credit will be used if the water level in the first bucket goes below zero.

$BpESum$ is the water level value in the second bucket 404 and represents the current accumulated value of unused bandwidth in excess of $CIR+B_c$ (i.e. past overflows from the first bucket 402). The $ESum$ bucket 404 represents a cache of excess

bandwidth that the user 62 can save up to be used for longer periods of high transmission demand.

Every measurement interval the quantum of bits 400 are added to the first bucket 402. Any overflow of bandwidth above the limit of the first bucket 402 is added to the ESum bucket 404.

Both buckets are "leaky" in that the amount of traffic transmitted in the past measurement interval leaks out of the appropriate bucket based on the previous priority level. The current water level of each bucket is then the result of adding in the Committed Information Rate (CIR) bit quantum for the last measurement interval and subtracting the amount of outgoing traffic 409 actually transmitted in the last measurement interval, T1Out. The water level of bucket 402 determines a priority value in a high priority band 403. The water level of bucket 404 determines a priority value in a low priority band 405.

This section of IVERSON et al. discloses that "BpEsum is the water level value in the second bucket 404 and represents the current accumulated value of unused bandwidth in excess of CIR [committed information rate] + B_c [committed burst bandwidth credit] (i.e. past overflows from the first bucket 402)," and that "[t]he ESum bucket 404 represents a cache of excess bandwidth that the user 62 can save up to be used for longer periods of high transmission demand." Further, this section of IVERSON et al. discloses that "[i]f the port has accumulated any excess bandwidth credit by transmitting below CIR for some amount of time, this bandwidth credit will be used if the water level in the first bucket goes below zero." However, this section of IVERSON et al. does not disclose or suggest that one of a plurality of guaranteed bandwidth buckets is allocated an amount of bandwidth that is based on a guaranteed bandwidth allocation associated with a first policy and another one of the plurality of guaranteed bandwidth buckets is allocated another amount of bandwidth that is based on another guaranteed bandwidth associated with a different policy. Instead, this section of IVERSON et al. discloses only a single information rate (CIR+B_c) associated with both a first committed bandwidth bucket and a second excess bandwidth bucket. Thus, this section of IVERSON et al. does not disclose or suggest

determining, by the network appliance and when the second bandwidth or the shared bandwidth is sufficient to allow the packet to pass immediately through the network appliance, whether a different policy is to be applied to the packet; determining, by the network appliance and when the different policy is to be applied to the packet, whether a third bandwidth in another one of the plurality of guaranteed bandwidth buckets is sufficient to allow the packet to pass immediately through the network appliance, where the third bandwidth is allocated to the other one of the plurality of guaranteed bandwidth buckets based on another guaranteed bandwidth associated with the different policy; and transferring bandwidth from the shared bandwidth bucket to the other one of the plurality of guaranteed bandwidth buckets when the third bandwidth in the other one of the plurality of guaranteed bandwidth buckets is not sufficient to allow the packet to pass immediately through the network appliance, as recited in claim 1, as amended.

For at least the foregoing reasons, Applicants submit that claim 1 is patentable over IVERSON et al. and what is allegedly well known in the art, whether taken alone or in any reasonable combination. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 1 under 35 U.S.C. § 103(a) based on IVERSON et al. and what is allegedly well known in the art.

Claims 5 and 6 depend from claim 1. Therefore, these claims are patentable over IVERSON et al. and what is allegedly well known in the art, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 5 and 6 under 35 U.S.C. § 103(a) based on IVERSON et al. and what is allegedly well known in the art.

Amended independent claim 14 recites features similar to (yet possibly of different scope than) features described above with respect to claim 1. Therefore, this claim is patentable over IVERSON et al. and what is allegedly well known in the art, whether taken alone or in any reasonable combination, for at least reasons similar to the reasons given above with respect to claim 1. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 14 under 35 U.S.C. § 103(a) based on IVERSON et al. and what is allegedly well known in the art.

Rejection under 35. U.S.C. § 103(a) based on IVERSON et al. and HO

Claims 2, 3, 7-11, and 15-20 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over IVERSON et al. and HO. Applicants respectfully traverse this rejection.

Claims 2, 3, and 7-11 depend from claim 1. Without acquiescing in the rejection, Applicants submit that the disclosure of HO does not remedy the deficiencies in the disclosure of IVERSON et al. and what is allegedly well known in the art identified above with respect to claim 1. Therefore, Applicants submit that these claims are patentable over IVERSON et al. and HO, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 2, 3, and 7-11 under 35 U.S.C. § 103(a) based on IVERSON et al. and HO.

Amended independent claims 15, 16, and 20 recite features similar to (yet possibly of different scope than) features described above with respect to claim 1. Without acquiescing in the rejection, Applicants submit that the disclosure of HO does not remedy the deficiencies in the disclosure of IVERSON et al. and what is allegedly well known in the art identified above with

respect to claim 1. Therefore, claims 15, 16, and 20 are patentable over IVERSON et al. and HO, whether taken alone or in any reasonable combination, for at least reasons similar to the reasons given above with respect to claim 1. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 15, 16, and 20 under 35 U.S.C. § 103(a) based on IVERSON et al. and HO.

Claims 17-19 depend from claim 16. Therefore, these claims are patentable over IVERSON et al. and HO, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 16. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 17-19 under 35 U.S.C. § 103(a) based on IVERSON et al. and HO.

Rejection under 35. U.S.C. §103(a) based on IVERSON et al. and AAPA

Claim 4 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over IVERSON et al. and AAPA. Applicants respectfully traverse this rejection.

Claim 4 depends from claim 1. Without acquiescing in the rejection, Applicants submit that AAPA does not remedy the deficiencies in the disclosure of IVERSON et al. and what is allegedly well known in the art identified above with respect to claim 1. Therefore, claim 4 is patentable over IVERSON et al. and AAPA, for at least the reasons given above with respect to claim 1.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 4 under 35 U.S.C. § 103(a) based on IVERSON et al. and AAPA.

Rejection under 35. U.S.C. §103(a) based on IVERSON et al., HO, and CHIRUVOLU

Claim 12 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over IVERSON et al., HO, and CHIRUVOLU. Applicants respectfully traverse this rejection.

Claim 12 depends from claim 1. Without acquiescing in the rejection, Applicants submit that the disclosures of HO and CHIRUVOLU, whether taken alone or in any reasonable combination, do not remedy the deficiencies in the disclosure of IVERSON et al. and what is allegedly well known in the art identified above with respect to claim 1. Therefore, claim 12 is patentable over IVERSON et al., HO, and CHIRUVOLU, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 12 under 35 U.S.C. § 103(a) based on IVERSON et al., HO, and CHIRUVOLU.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of the application, and the timely allowance of the pending claims.

As Applicants' remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicants' silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such assertions (e.g., whether a reference constitutes prior art, reasons to modify a reference and/or to combine references, assertions as to dependent claims, Official Notice, etc.) is not a concession by Applicants that such assertions are accurate or such requirements have been met, and Applicants reserve the right to analyze and dispute such assertions/requirements in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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